Claims

1. An isolated polypeptide comprising an unbroken sequence of amino acids from SEQ ID. NO. 1, or 2, characterised by an ability to complex with a major histocompatibility complex molecule type HLA-A2, preferably HLA-A2.1.

2. An isolated polypeptide comprising an unbroken sequence of amino acids from SEQ. ID. NO. 1, or 2, characterised by an ability to elicit an immune response from human lymphocytes.

3. An isolated polypeptide as claimed in either one of claims 1 and 2, the polypeptide being a nonapeptide wherein the amino acid adjacent to the N-terminal amino acid is L or M, preferably L, and the C-terminal amino acid is L, V, or I, preferably L.

4. A nonapeptide comprising an unbroken sequence of amino acids from SEQ. ID. NO. 1, or 2, wherein the amino acid adjacent to the N-terminal amino acid is L or M, preferably L, and the C-terminal amino acid is L, V, or I, preferably L, other than a nonapeptide having the amino acid sequence CLGLSYDGL.

5. A nonapeptide as claimed in either of claims 3 and 4, wherein the amino acid in position 3 is Y and/or the amino acid in position 4 is D and/or the amino acid in position 5 is G and/or the amino acid in position 7 is E and/or the amino acid in position 8 is H.

6. A polypeptide as claimed in any one of claims 1-5, other than a nonapeptide having any one of amino acid sequences:-

(a) FLLFKYQMK;

(b) FIEGYCTPE; or

(c) GLEGAQAPL.

7. A polypeptide as claimed in any one of claims 2-6, further characterised by an ability to complex with a major histocompatibility complex molecule type HLA-A2, preferably HLA-A2.1.

8. A decapeptide comprising a nonapeptide as claimed in any of claims 3-6 and, preferably, an unbroken sequence of amino acids from SEQ. ID. NO. 1, or 2.

9. A nonapeptide having the amino acid sequence GLYDGMEHL or GLYDGREHS, preferably GLYDGMEHL.

10. A decapeptide having the amino acid sequence GLYDGMEHLI or GLYDGREHSV, preferably GLYDGMEHLI.

11. An isolated polypeptide of up to about 93 amino acids in length, characterised by comprising a nonapeptide or a decapeptide as claimed in any of claims 3-10.

12. A polypeptide as claimed in claim 11, comprising of an unbroken sequence of amino acids from SEQ. ID. NO. 1, or 2.

13. A polypeptide as claimed in any of the preceding claims, wherein the unbroken sequence is from SEQ. ID. NO. 1.

14. A polypeptide as claimed in any of the preceding claims and capable of eliciting an immune response from human lymphocytes.

15. A polypeptide as claimed in claim 14 and capable of eliciting an immune response from human lymphocytes when complexed with a major histocompatibility complex molecule type HLA-A2, preferably HLA-A2.1.

16. A polypeptide as claimed in claim 14 or claim 15, wherein said immune response is an cytolytic response from human T-lymphocytes.

17. An isolated polypeptide or protein comprising a polypeptide as claimed in any of claims 1-16, wherein the amino acid sequence of said isolated polypeptide or protein is not that set out in either of SEQ. ID. NOs. 1 and 2 or that coded for by nucleotides 334-918 of SEQ. ID. NO. 7.

18. An isolated polypeptide or protein which is a functionally equivalent homologue to a polypeptide or protein as claimed in any of claims 1-17, wherein the amino acid sequence of said isolated polypeptide or protein is not that set out in either of SEQ. ID. NOs. 1 and 2 or that coded for by nucleotides 334-918 of SEQ. ID. NO. 7.

19. An isolated nucleic acid molecule comprising a nucleotide sequence coding for a polypeptide or protein as claimed in any of claims 1-17, or a complimentary nucleotide sequence, wherein said nucleotide sequence is not that set out in any of SEQ. ID. NOs. 3, 4, 5, 6 or 7.

20. A nucleic acid molecule as claimed in claim 19 and comprising an unbroken sequence of nucleotides from SEQ. ID. NO. 3, 4 or 5, or a complimentary sequence, or an RNA transcript of said nucleic acid molecule.

21. A nucleic acid molecule as claimed in claim 19 or claim 20, wherein said nucleotide sequence encodes a plurality of epitopes or a polytope.

22. An expression vector comprising a nucleic acid molecule as claimed in any of claims 19-21 operably linked to a promoter.

23. An expression vector as claimed in claim 22, further comprising a nucleotide sequence coding for a major histocompatibility complex molecule type HLA-A2, preferably HLA-A2.1, a cytokine or a co-stimulatory molecule, or a bacterial or viral genome or a portion thereof.

24. A host cell transformed or transfected with an expression vector as claimed in claim 22 or claim 23.

25. A host cell as claimed in claim 24, transformed or transfected with an expression vector coding for a major histocompatibility complex molecule type HLA-A2, preferably HLA-A2.1, a cytokine or a co-stimulatory molecule.

26. A polypeptide-binding agent which selectively binds or is specific for an isolated polypeptide or protein as claimed in any of claims 1-18.

27. A polypeptide-binding agent as claimed in claim 26, comprising an antibody, preferably a monoclonal antibody or an antibody fragment specific for an isolated polypeptide as claimed in any of claims 1-18.

28. A polypeptide-binding agent as claimed in claim 26 or claim 27 which selectively binds or is specific for a complex of a polypeptide as claimed in any of claims 1-18 and a major histocompatibility complex molecule type HLA-A2, preferably HLA-A2.1, but which does not bind said major histocompatibility molecule alone.

29. A polypeptide-binding agent as claimed in any of claims 26-28, comprising a cytolytic T-cell which is specific for a complex of a polypeptide as claimed in any of claims 1-18 and a major histocompatibility complex molecule type HLA-A2, preferably HLA-A2.1.

30. A polypeptide or protein as claimed in any of claims 1-18, an isolated nucleic acid molecule as claimed in any of claims 19-21, an expression vector as claimed in either of claims 22 or 23, a host cell as claimed in either of claims 24 or 25, or a polypeptide binding agent as claimed in any of claims 26-29, for use in the therapy, prophylaxis or diagnosis of tumours.

31. A pharmaceutical composition for the prophylaxis, therapy or diagnosis of tumours comprising a polypeptide or protein as claimed in any of claims 1-18, a nucleic acid molecule as claimed in any of claims 19-21, an expression vector as claimed in either of claims 22 or 23, a host cell as claimed in either of claims 24 or

25, or a polypeptide binding agent as claimed in any of claims 26-29, optionally in admixture with a pharmaceutically acceptable carrier and optionally further comprising a major histocompatibility molecule type HLA-A2, preferably HLA-A2.1.

32. A pharmaceutical composition for the prophylaxis, therapy or diagnosis of tumours comprising a polypeptide or protein as claimed in any of claims 1-18 complexed with a major histocompatibility molecule, HLA, and presented on the surface of an APC, preferably a dendritic cell, wherein said complex is formed by pulsing said APC with polypeptide or protein.

33. A cell, preferably an APC, and more preferably, a dendritic cell, which has been pulsed with a polypeptide or protein as claimed in any of claims 1-18 to present on its surface said polypeptide or protein as a complex with a major histocompatibility molecule, HLA.

34. A pharmaceutical composition as claimed in any of claims 31 and 32 further comprising a co-stimulatory molecule.

35. A method of diagnosing disease, preferably cancer, comprising contacting a biological sample isolated from a subject with an agent that is specific for a polypeptide or protein as claimed in any of claims 1-18, or a nucleic acid molecule as claimed in any of claims 19-21 and assaying for interaction between the agent and any of the polypeptide, protein or nucleic acid molecule either free in or forming an integral part of the sample as a determination of the disease.

36. A method as claimed in claim 35, wherein the agent is a polypeptide-binding agent as claimed in any of claims 26-29.

37. A method of producing a cytolytic T-cell culture reactive against tumour cells, comprising removing a lymphocyte sample from an individual and culturing the lymphocyte sample with a polypeptide or protein as claimed in any of claims 1-

15, an expression vector as claimed in either of claims 22 or 23, or a host cell as claimed in either of claims 24 or 25.

38. A product comprising cytolytic T-cells reactive against a tumour cell expressing an antigen comprising a polypeptide or protein as claimed in any of claims 1 to 18, for use in the prophylaxis, therapy or diagnosis of tumours.

39. A product as claimed in claim 38 and obtained or obtainable by a method as claimed in claim 37.

40. A method of treating tumours in a patient comprising administering a composition as claimed in any of claims 30, 31, 32, 34, 38 or 39 to the patient in an amount effective to control or prevent tumour growth.